

Claims:

1. An apparatus that transmits content organized into channels,  
wherein a channel's content includes a plurality of URL data items and each  
URL data item is addressed by a URL, the system comprising:  
means for assigning one or more multicast addresses to each channel;  
means for scheduling the assembling of a channel's content;  
means for assembling the channel's content;  
means for fragmenting the channel's content into packets, wherein each  
packet is addressed with one of the channel's multicast addresses; and  
means for multicasting the packets.

2. The apparatus of claim 1, wherein the means for multicasting the  
packets includes means for transmitting the packets to a multicast receiver of a  
multicast network.

3. The apparatus of claim 1, further comprising means for encrypting  
a subset of a channel's packets prior to multicasting, wherein the encryption  
means encrypts either all or a part of the packet and wherein each channel's  
packets are encrypted with a set of encryption keys which are unique to that  
channel.

4. The apparatus of claim 3, further comprising:  
means for receiving requests from a receiver of the multicast for access  
to a channel's packets,  
means for mapping the requested channel to the multicast addresses  
that carry the channel's packets, and  
means for requesting authorization for the receiver to access the  
requested channel's packets.

- 2 5. The apparatus of claim 4, further comprising means for authenticating the requests to ensure that the requests originated from the receiver for which access is being requested.
- 2 6. The apparatus of claim 2, wherein the multicast network is a geosynchronous satellite digital TV broadcast system.
- 2 7. The apparatus of claim 1, wherein the multicast network is a one-way cable TV network.
- 2 8. The apparatus of claim 1, wherein the multicast network is a digital video broadcast (DVB) network.
- 2 9. The apparatus of claim 1, wherein the packets are multicast to a plurality of receivers. A
- 2 10. The apparatus of claim 9, wherein a channel's content includes indexing information which allows URL data items contained within the channel's content to be quickly looked up by the receiver which receives the channel's content.
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- 2 11. The apparatus of claim 10, wherein the channel's content further includes a data structure containing each domain name present in the URLs of the URL data items within the channel's content.
- 2 12. The apparatus of claim 9, further comprising a conditional access system for controlling each receiver's access to packets, wherein each receiver can only access packets which contain multicast addresses which the conditional access system has authorized the receiver to access.
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13. The apparatus of claim 12, wherein the means for multicasting  
the packets is a geosynchronous satellite digital TV broadcast earth station.

14. The apparatus of claim 12, further comprising:  
means for receiving requests from the receivers to obtain access to a  
channel's packets,  
means for mapping the requested channel to the multicast addresses  
that carry the channel's packets, and  
means for authorizing the receivers' access to a channel's packets in  
response to the receivers' request for access.

15. The apparatus of claim 13, wherein a channel's content includes  
indexing information which allows URL data items contained within the  
channel's content to be quickly looked up by the receiver which receives the  
channel's content, the system further comprising:  
means for scheduling a configurable number of retransmissions of the  
channel's previously assembled content;  
means for fragmenting and multicasting the channel's content according  
to the schedule; and  
means for specifying the transmission rate of the channel's content,  
wherein the packets containing the channel's content are multicast at the  
specified rate.

16. The apparatus of claim 13, further comprising means for  
compressing a subset of the URL data items, wherein each URL data item is  
compressed individually independent of other URL data items such that each  
compressed URL data item can be decompressed without decompressing other  
URL data items.

17. The apparatus of claim 16, wherein the URL data items are compressed with a lossless data compression algorithm.

18. The apparatus of claim 1, further comprising:  
means for scheduling a configurable number of retransmissions of a channel's previously assembled content; and  
means for fragmenting and multicasting the channel's content according to the schedule.

19. The apparatus of claim 18, further comprising means for specifying a transmission rate of a channel's content, wherein the packets containing the channel's content are multicast at the specified rate.

20. The apparatus of claim 19, further comprising:  
means for assigning one or more multicast addresses to an announcement packet, wherein the announcement packet includes an announcement of an upcoming transmission of a channel's content; and  
means for multicasting the announcement packet prior to the multicast of the packets containing the channel's content.

21. The apparatus of claim 19, wherein the channel's content includes a data structure containing each domain name present in the URLs of the URL data items within the channel's content.

22. The apparatus of claim 19, wherein the packets are multicast to a plurality of receivers and wherein a channel's content includes indexing information which allows URL data items contained within the channel's content to be quickly looked up by the receiver which receives the channel's content.

23 The apparatus of claim 22, wherein the channel's content further  
2 includes a data structure containing each domain name present in the URLs of  
the URL data items within the channel's content.

24 The apparatus of claim 1, wherein a channel's content includes a  
2 data structure containing each domain name present in the URLs of the URL  
data items within the channel's content. A

25 The apparatus of claim 1, wherein the means for assembling the  
2 channel's content further comprises:

means for assembling a base package of the channel's content, wherein  
4 the base package contains each URL data item in the channel; and

means for assembling a delta package of the channel's content, wherein  
6 the delta package contains URL data items which have changed or are new  
since the previous assembling of the base package.

26. An apparatus that transmits content organized into channels,  
wherein a channel's content includes a plurality of URL data items and each  
URL data item is addressed by a URL, the apparatus comprising:  
means for scheduling the assembling of a channel's content;  
means for assembling the channel's content;  
means for compressing a subset of the URL data items, wherein each  
URL data item is compressed individually independent of other URL data items  
such that each compressed URL data item can be decompressed without  
decompressing other URL data items;  
means for fragmenting the channel's content into packets; and  
means for multicasting the packets.

27. The apparatus of claim 26, wherein the URL data items are  
compressed with a lossless data compression algorithm.

28. The apparatus of claim 26, wherein the means for assembling the  
channel's content further comprises:  
means for assembling a base package of the channel's content, wherein  
the base package contains each URL data item in the channel; and  
means for assembling a delta package of the channel's content, wherein  
the delta package contains URL data items which have changed or are new  
since the previous assembling of the base package.

29. The apparatus of claim 28, wherein the means for scheduling the  
assembling of the channel's content comprises means for scheduling the  
assembling of the base package and means for scheduling the assembling of the  
delta package.

2 30. The apparatus of claim 28, further comprising means for difference compressing a subset of the URL data items in a channel's content which is present in both the delta package and the previous base package.

2 31. The apparatus of claim 30, wherein the difference compression means further comprises:

4 means for dividing a URL data item in the delta package into sections; and

6 for each section, means for placing into a compressed version of the URL data item, one of a reference to where that section can be found in the base package, or the section of URL data item from the delta package.

2 32. The apparatus of claim 28, further comprising means for assembling a second delta package which contains a subset of the URL data items which have changed or are new since the assembling of the previous delta package.

2 33. The apparatus of claim 26, further comprising means for encrypting a subset of a channel's packets prior to transmission, wherein the encryption means encrypts either all or part of the packet and wherein each channel's packets are encrypted with a set of encryption keys which are unique to that channel.

2 34. An apparatus that transmits content organized into channels,  
wherein a channel's content includes a plurality of URL data items and each  
URL data item is addressed by a URL, the apparatus comprising:

4 means for assembling a base package of a channel's content, wherein  
the base package contains each URL data item in the channel;

6 means for fragmenting the base package into packets;

8 means for multicasting the base package packets to a plurality of  
receivers;

10 means for assembling a delta package of a channel's content, wherein  
the delta package contains URL data items which have changed or are new  
since the previous assembling of the base package;

12 means for fragmenting the delta package into packets; and

14 means for multicasting the delta package packets to the plurality of  
receivers.

2 35. The apparatus of claim 34, wherein some of the receivers  
comprise a personal computer. A

2 36. The system of claim 34, wherein some of the receivers comprise  
a set top box.

2 37. The apparatus of claim 34, further comprising means for  
scheduling the assembling of base packages and delta packages, wherein the  
base packages and delta packages are assembled according to the schedule.

2 38. The apparatus of claim 34, further comprising means for  
scheduling the multicast transmission of base package packets and for  
scheduling subsequent periodic multicast transmission of delta package  
4 packets, wherein the base package packets and delta package packets are  
multicast according to the schedule.



2 39. The apparatus of claim 38, wherein base package packets are scheduled for transmission at a time when the receiver is not likely to be in use for other applications.

2 40. The apparatus of claim 39, wherein the base package packets are scheduled for transmission late at night or early in the morning.

2 41. The apparatus of claim 34, further comprising means for compressing a subset of the URL data items in the base and delta packages, wherein each URL data item is compressed individually independent of other  
4 URL data items such that each compressed URL data item can be decompressed without decompressing other URL data items.

2 42. The apparatus of claim 41, wherein the URL data items are compressed with a lossless data compression algorithm.

2 43. The apparatus of claim 41, further comprising means for difference compressing a subset of the URL data items that are present in both in the delta package and the previous base package.

2 44. The apparatus of claim 43, wherein the difference compression means further comprises:

4 means for dividing a URL data item in the delta package into sections;  
and

6 for each section, means for placing into a compressed version of the URL data item, one of a reference to where that section can be found in the base package, or the section of URL data item from the delta package.

2 45. The apparatus of claim 44, further comprising means for  
compressing a subset of the previously difference compressed URL data item  
with a lossless data compression algorithm.

2 46. The apparatus of claim 34, further comprising means for  
assembling a second delta package which contains URL data items which have  
changed since the assembling of the previous delta package.

2 47. An apparatus that transmits content organized into channels,  
wherein a channel's content includes a plurality of URL data items and each  
URL data item is addressed by a URL, the apparatus comprising:  
4 means for scheduling the assembling of a channel's content;  
means for assembling the channel's content according to the schedule;  
6 means for fragmenting the channel's content into packets;  
means for multicasting the packets to a plurality of receivers, wherein  
8 each receiver stores the received channel's content in a receiver memory; and  
means for receiving usage reports from each receiver, wherein each  
10 usage report identifies a subset of URL data items from the stored URL data  
items that was accessed from the receiver memory.

2 48. The apparatus of claim 47, further comprising means for  
organizing the received usage reports by channel.

2 49. The apparatus of claim 47, wherein each usage report contains  
information identifying a subset of URL data items delivered to a web browser.

2 50. The apparatus of claim 47, wherein the usage reports comprise a  
set of files and wherein the URL data items accessed for each channel is  
referenced in one set of files.

2 51. The apparatus of claim 47, wherein the usage reports contain  
information identifying each URL data item, from the stored URL data items,  
being delivered to a web browser.

2 52. The apparatus of claim 50, wherein usage reporting is performed  
on a subset of a channel's URL data items and the files contain a separate  
record for each time a usage reported URL data item was delivered to a web  
4 browser, wherein the record identifies the URL of the URL data item.

6 53. The apparatus of claim 52, wherein the record identifies when the URL data item was delivered to the web browser.

2 54. The apparatus of claim 52, wherein the record contains a field uniquely identifying the user that accessed the URL data item.

2 55. The apparatus of claim 54, wherein the field uniquely identifying the user does not specify the identity of the user.

2 56. The apparatus of claim 54, wherein the field uniquely identifying the user specifies the identity of the user.

2 57. The apparatus of claim 47, wherein a channel's content is assembled from a web server and further comprising means for notifying the web server from which a URL data item was assembled that the URL data item was accessed by a user.

2 58. The apparatus of claim 57, wherein the web server is notified that the URL data item was accessed by a user by notifying the web server that the URL data item was delivered to a browser.

2 59. The apparatus of claim 57, wherein the web server is notified that the URL data item was accessed by initiating an HTTP GET operation for the URL data item.

2 60. The apparatus of claim 57, wherein the web server is notified of multiple accesses of multiple URL data items by initiating an HTTP PUT operation.

61. The apparatus of claim 57, wherein the web server is notified of multiple accesses of multiple URL data items by initiating an HTTP POST operation.

62. The apparatus of claim 57, wherein the web server is notified that the URL data item was accessed by e-mail, and wherein multiple accesses of multiple URL data items is reported in one e-mail.

63. The apparatus of claim 47, further comprising means for compressing a subset of the URL data items;

means for compressing a subset of the URL data items, wherein each URL data item is compressed individually independent of other URL data item such that each compressed URL data item can be decompressed without decompressing other URL data items;

64. A method for multicasting content organized into channels, wherein a channel's content includes a plurality of URL data items and each URL data item is addressed by a URL, the method comprising the steps of:  
assigning one or multicast addresses to each channel;  
scheduling the assembling of each channel's content;  
assembling each channel's content according to the schedule;  
fragmenting each channel's content into packets, wherein each packet is addressed with one of the channel's multicast addresses; and  
transmitting the packets via a multicast network to a plurality of receivers.

65. The method of claim 64, further comprising encrypting a subset of a channel's packets prior to transmitting the packets, wherein either all or a part of the packet are encrypted and wherein each channel's packets are encrypted with a set of encryption keys which are unique to that channel.

66. The method of claim 65, further comprising the steps of:  
6 receiving requests from the receivers for access to a channel's packets;  
mapping the requested channel to the multicast addresses that carry the  
8 channel's packets; and  
requesting authorization from the multicast network for the receiver to  
10 access the requested channel's packets.

67. The method of claim 66, further comprising the step of  
2 authenticating the requests to ensure that the requests originated from the  
receiver for which access is being requested.

68. The method of claim 64, wherein a channel's content includes  
2 indexing information which allows URL data items contained within the  
channel's content to be quickly looked up by the receiver which receives the  
4 channel's content.

69. The method of claim 68, wherein the channel's content further  
2 includes a data structure containing each domain name present in the URLs of  
the URL data items within the channel's content.

70. The method of claim 68, wherein a channel's content includes  
2 indexing information which allows URL data items contained within the  
channel's content to be quickly looked up by the receiver which receives the  
4 channel's content, the method further comprising the steps of:  
scheduling a configurable number of retransmissions of the channel's  
6 previously assembled content;  
specifying a transmission rate of the channel's content; and  
8 fragmenting and transmitting the channel's content to the receivers  
according to the schedule at the specified transmission rate.

2 71. The method of claim 65, further comprising the step of  
4 compressing a subset of the URL data items, wherein each URL data item is  
compressed individually independent of other URL data items such that each  
compressed URL data item can be decompressed without decompressing other  
URL data items.

2 72. The method of claim 71, wherein the URL data items are  
compressed with a lossless data compression algorithm.

2 73. The method of claim 64, further comprising the steps of:  
4 scheduling a configurable number of retransmissions of a channel's  
previously assembled content; and  
fragmenting and transmitting the channel's content to the receivers  
according to the schedule.

2 74. The method of claim 73, further comprising the step of specifying  
a transmission rate of a channel's content, wherein the packets containing the  
channel's content are transmitted at the specified rate.

2 75. The method of claim 73, further comprising the steps of:  
4 assigning one or more multicast addresses to an announcement packet,  
wherein the announcement packet includes an announcement of an upcoming  
transmission of a channel's content; and  
6 transmitting the announcement packet to the receivers prior to  
transmitting the packets containing the channel's content.

2 76. The method of claim 64, wherein the step of assembling the  
channel's content further comprises:  
4 assembling a base package of the channel's content, wherein the base  
package contains each URL data item in the channel; and  
6 assembling a delta package of the channel's content, wherein the delta  
package contains URL data items which have changed or are new since the  
previous assembling of the base package.



2 77. A method for transmitting content organized into channels,  
wherein a channel's content includes a plurality of URL data items and each  
URL data item is addressed by a URL, the method comprising the steps of:  
4 scheduling the assembling of a channel's content;  
assembling the channel's content according to the schedule;  
6 compressing a subset of the URL data items, wherein each URL data  
item is compressed individually independent of other URL data items such that  
8 each compressed URL data item can be decompressed without decompressing  
other URL data items;  
10 fragmenting the channel's content into packets; and  
multicasting the packets via a multicast network to a plurality of  
12 receivers.

2 78. The method of claim 77, wherein the URL data items are  
compressed with a lossless data compression algorithm.

2 79. The method of claim 77, wherein the step of assembling the  
channel's content further comprises the steps of:  
4 assembling a base package of the channel's content, wherein the base  
package contains each URL data item in the channel; and  
assembling a delta package of the channel's content, wherein the delta  
6 package contains URL data items which have changed or are new since the  
previous assembling of the base package.

2 80. The method of claim 79, wherein the step of scheduling the  
assembling of the channel's content comprises scheduling the assembling of the  
base package and scheduling the assembling the delta package

81. The method of claim 80, further comprising the step of difference  
compressing a subset of the URL data items in a channel's content which is  
present in both the delta package and the previous base package.

82. The method of claim 81, wherein the step of difference  
compressing further comprises the steps of:

dividing a URL data item in the delta package into sections; and  
for each section, placing into a compressed version of the URL data  
item, one of a reference to where that section of content can be found in the  
base package, or the section of the URL data item from the delta package.

83. The method of claim 82, wherein the reference to where the  
section of URL data item can be found in the base package is an offset from a  
beginning of the URL to a first byte and an offset to a last byte being  
referenced.

84. The method of claim 79, further comprising the step of  
assembling a second delta package which contains URL data item which has  
changed since the assembling of the previous delta package.

85. The method of claim 77, further comprising the step of  
encrypting a subset of a channel's packets prior to transmission, wherein either  
all or part of the packet are encrypted and wherein each channel's packets are  
encrypted with a set of encryption keys which are unique to that channel.

86. A method for transmitting content organized into channels,  
wherein a channel's content includes a plurality of URL data items and each  
URL data item is addressed by a URL, the system comprising:

assembling a base package of a channel's content, wherein the base  
package contains each URL data item in the channel;

fragmenting the base package into packets;

multicasting the base package packets to a plurality of receivers;

assembling a delta package of a channel's content, wherein the delta  
package contains URL data items which have changed or are new since the  
previous assembling of the base package;

fragmenting the delta package into packets; and

multicasting the delta package packets to the plurality of receivers.

87. The method of claim 86, further comprising the step of  
scheduling the assembling of base packages and delta packages, wherein the  
base packages and delta packages are assembled according to the schedule.

88. The method of claim 86, further comprising the step of  
scheduling the multicast transmission of base package packets and for  
scheduling subsequent periodic multicast transmission of delta package  
packets, wherein the base package packets and delta package packets are  
multicast according to the schedule.

89. The method of claim 88, wherein base package packets are  
scheduled for transmission at a time when the receiver is not likely to be in use  
for other applications.

2 90. The method of claim 86, further comprising the step of  
4 compressing a subset of the URL data items in the base and delta packages,  
wherein each URL data item is compressed individually independent of other  
URL data items such that each compressed URL data item can be  
decompressed without decompressing other URL data items.

2 91. The method of claim 90, wherein the URL data items are  
compressed with a lossless data compression algorithm.

2 92. The method of claim 90, further comprising the step of difference  
compressing a subset of the URL data items which are present in both in the  
delta package and the previous base package.

2 93. The method of claim 92, wherein the step of difference  
compressing further comprises:  
4 dividing a URL data item in the delta package into sections; and  
for each section, placing into a compressed version of the URL data  
item, one of a reference to where that section can be found in the base package,  
or the section of the URL data item from the delta package.

2 94. The method of claim 93, wherein the reference to where the  
section of URL data item can be found in the base package is an offset from a  
beginning of the URL to a first byte and an offset to a last byte being  
4 referenced.

2 95. The method of claim 93, further comprising compressing a subset  
of the previously difference compressed URL data items with a lossless data  
compression algorithm.

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96. The method of claim 86, further comprising the step of assembling a second delta package that contains URL data items that have changed since the assembling of the previous delta package.

2 97. A method for transmitting content organized into channels,  
wherein a channel's content includes a plurality of URL data items and each  
URL data item is addressed by a URL, the method comprising the steps of:  
4 scheduling the assembling of a channel's content;  
assembling the channel's content according to the schedule;  
6 fragmenting the channel's content into packets;  
multicasting the packets to a plurality of receivers, wherein each  
8 receiver stores the received channel's content in a receiver memory; and  
receiving usage reports from each receiver, wherein each usage report  
10 identifies a subset of URL data items from the stored URL data items that was  
accessed from the receiver memory.

2 98. The method of claim 97, further comprising the step of  
organizing the received usage reports by channel.

2 99. The method of claim 97, wherein each usage report contains  
information identifying a subset of URL data items delivered to a web browser.

2 100. The method of claim 97, wherein the usage reports comprise a  
set of files, and wherein the URL data item accessed for each channel is  
referenced in one set of files.

2 101. The method of claim 97, wherein the usage reports contain  
information identifying each URL data item, from the stored URL data items,  
being delivered to a web browser.

102. The method of claim 100, further comprising the step of  
performing usage reporting on a subset of a channel's URL data items and  
wherein the files contain a separate record for each time a usage reported URL  
data item was delivered to the web browser, and wherein the record identifies  
the URL of the URL data item.

103. The method of claim 102, wherein the record identifies when  
the URL data item was delivered to the web browser.

104. The method of claim 102, wherein the record contains a field  
uniquely identifying the user that accessed the URL data item.

105. The method of claim 104, wherein the field uniquely identifying  
the user does not specify the identity of the user.

106. The method of claim 104, wherein the field uniquely identifying  
the user specifies the identity of the user.

107. The method of claim 97, wherein a channel's content is  
assembled from a web server and further comprising the step of notifying the  
web server from which a URL data item was assembled that the URL data item  
was accessed by a user.

108. The method of claim 107, wherein the web server is notified  
that the URL data item was accessed by a user by notifying the web server that  
the URL data item was delivered to a browser.

2 109. The method of claim 107, wherein the web server is notified that the URL data item was accessed by initiating an HTTP GET operation for the URL data item.

2 110. The method of claim 107, wherein the web server is notified of multiple accesses of multiple URL data items by initiating an HTTP PUT operation.

2 111. The method of claim 107, wherein the web server is notified of multiple accesses of multiple URL data items by initiating an HTTP POST operation.

2 112. The method of claim 107, wherein the web server is notified that the URL data item was accessed by e-mail, and wherein multiple accesses of multiple URL data item is reported in one e-mail.

2 113. The method of claim 97, further comprising the step of compressing a subset of the URL data items, wherein each URL data item is compressed individually independent of other URL data items such that each compressed URL data item can be decompressed without decompressing other URL data items.

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114. A receiver for receiving from a multicast network content  
organized into channels, wherein a channel's content includes a plurality of  
URL data items and each URL data item is addressed by a URL, and wherein  
the multicast network transmits the channel's content to the receiver in packets,  
the receiver comprising:

means for determining a multicast address used to carry a channel's  
packets;

means for enabling reception of packets containing a channel's  
multicast address;

means for receiving the packets containing a channel's multicast  
address;

means for assembling the received packets into a channel's content;

means for storing the channel's content; and

means for allowing a user to access the stored channel's content.

115. The receiver of claim 114, wherein some of the received packets  
are wholly or partially encrypted and the receiver further comprises means for  
decrypting the encrypted packets using a decrypting key unique to the channel.

116. The receiver of claim 114, wherein the receiver is only  
authorized to receive selected packets.

117. The receiver of claim 114, wherein the channel's content is  
stored in a single file.

118. The receiver of claim 114, wherein the channel's content is  
stored in a number of files, and wherein the number of files is less than the total  
number of URL data items in the channel.

119. The receiver of claim 114, further comprising means for  
allowing the user to designate the channels to be received.

120. The receiver of claim 119, further comprising means for only  
receiving the user designated channels.

121. The receiver of claim 120, further comprising means for  
displaying to the user the set of channels which can be received.

122. The receiver of claim 121, further comprising means for  
receiving an electronic program guide channel, wherein the content of the  
electronic program guide channel includes channel selection information  
allowing the user to evaluate which channels the receiver should receive.

123. The receiver of claim 122, further comprising means for  
receiving updates for the electronic program guide channel.

124. The receiver of claim 122, wherein the channel selection  
information in the electronic program guide channel includes a schedule for  
when the content of the channels will be transmitted.

125. The receiver of claim 122, wherein the channel selection  
information in the electronic program guide channel includes an amount of  
memory space needed to store the channel's content.

126. The receiver of claim 114, further comprising means for  
determining whether all the packets for a channel have been received.

127. The receiver of claim 126, wherein the multicast network  
transmits packets to the receiver more than once and further comprising means  
for determining which packets for a channel were not received and assembling  
the channel's missing packets from the retransmitted packets.

128. The receiver of claim 114, wherein the receiver comprises a  
personal computer.

129. The receiver of claim 114, wherein the receiver comprises a set  
top box.

130. The receiver of claim 114, wherein the receiver is integrated  
with a digital television.

131. The receiver of claim 114, further comprising:  
means for determining when a URL data item requested to be accessed  
by the user is not present within the stored channel content,  
means for notifying the user that the requested URL data item is not  
present within the stored channel content, and  
means for allowing the user to access the non-present URL data item  
via a connection to a TCP/IP network.

132. The receiver of claim 131, wherein the TCP/IP network  
comprises the Internet.

133. The receiver of claim 131, further comprising means for  
soliciting the user whether to access the non-present URL data item via the  
connection to the TCP/IP network..

2 134. The receiver of claim 132, wherein the multicast network is a geosynchronous satellite broadcast system and wherein the connection to the Internet is a dial-up modem.

2 135. The receiver of claim 114, further comprising means for tracking each time the user accesses URL data items in the stored channel content.

2 136. The receiver of claim 135, further comprising means for reporting the tracked user accesses to a web site from which the accessed URL data items were assembled.

2 137. The receiver of claim 114, wherein the packet receiving means monitors receiver activity and selectively receives packets based on the monitored activity.

2 138. The receiver of claim 114, further comprising means for soliciting the user to determine when packets should be received and wherein the packet receiving means selectively receives packets based on user preferences.  
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139. A receiver for receiving from a multicast network content organized into channels, wherein a channel's content includes a plurality of URL data items and each URL data item is addressed by a URL, and wherein the multicast network transmits the channel's content to the receiver in packets, the receiver comprising:

means for determining a multicast address used to carry a channel's packets;

means for enabling reception of packets containing a channel's multicast address;

means for receiving the packets containing a channel's multicast address;

means for assembling the received packets into a channel's content;

means for storing the channel's content;

means for allowing a user to access the stored channel's content; and

means for individually decompressing each compressed URL data item in the stored channel content at a time when the user accesses the URL data item.

140. The receiver of claim 139, wherein the URL data item is decompressed a first time the user access the URL data item and further comprising means for storing the decompressed URL data item.

141. The receiver of claim 139, wherein the URL data item is decompressed each time a user access the URL data item.

142. The receiver of claim 139, wherein the multicast network transmits a channel's content in base package packets and delta package packets, and the means for assembling the base package packets into a complete base package and assembling the delta package packets into a complete delta package.

2 143. The receiver of claim 142, wherein the means for storing the channel's content stores the complete base package for the channel and the complete delta package for the channel.

2 144. The receiver of claim 142, wherein the means for allowing a user  
4 to access the stored channel's content provides the user with a URL data item from a delta package when the URL data item is present in a delta package and provides the user a URL data item from a base package when the URL data item is not present in a delta package.

2 145. A receiver in a multicast system, comprising:  
means for receiving URL data items from a multicast network;  
4 means for storing the received URL data items;  
means for allowing a user to access the stored URL data items; and  
means for tracking user access to the stored URL data items.

2 146. The receiver of claim 145, wherein the URL data items are  
assembled from a web site and further comprising means for reporting the  
tracked user access to the web site.

2 147. The receiver of claim 145, wherein the tracking means includes  
means for counting a number of times the user accesses a subset of the stored  
URL data items.

2 148. The receiver of claim 145, further comprising:  
means for determining when a URL data item requested to be accessed  
by the user is not present within the stored URL data items,  
4 means for notifying the user that the requested URL data item is not  
present within the stored URL data items, and  
6 means for allowing the user to access the non-present URL data item  
via a connection to a TCP/IP network.

2 149. The receiver of claim 148, further comprising means for  
soliciting the user whether to access the non-present URL data item via the  
connection to the TCP/IP network.

2 150. The receiver of claim 148, wherein the multicast network is a  
geosynchronous satellite broadcast system and wherein the connection to the  
TCP/IP network is a dial-up modem.

151. A receiver in a multicast system, comprising:  
2 means for monitoring receiver activity; and  
means for selectively receiving content from a multicast network,  
4 wherein the content is selectively received based on the monitored receiver  
activity.

152. The receiver of claim 151, wherein the monitoring means  
2 monitors whether any other applications are currently active on the receiver.

153. The receiver of claim 151, wherein the monitoring means  
2 monitors utilization of a receiver memory.

154. The receiver of claim 151, wherein the monitoring means  
2 monitors user activity on an input device of the receiver.

155. The receiver of claim 154, wherein the receiver is a personal  
2 computer and the user activity comprises keystrokes on a keyboard input  
device.

156. The receiver of claim 154, wherein the receiver is a personal  
2 computer and the user activity comprises clicks on a mouse input device.

157. The receiver of claim 156, wherein the user activity further  
2 comprises keystrokes on a keyboard input device.

158. The receiver of claim 151, further comprising means for  
2 soliciting a user to specify when content should be received and wherein the  
receiving means receives content based on the user specifications.



2 159. The receiver of claim 158, wherein the user specifications include time of day when content should be received.

2 160. The receiver of claim 158, wherein the content comprises base  
4 packages and delta packages and the user specifications includes a first time period when base packages can be received and a second time period when delta packages can be received.

2 161. The receiver of claim 151, further comprising means for suspending reception of content when the monitoring means determines that reception will interfere with other receiver activity.

2 162. The receiver of claim 161, further comprising means for automatically enabling reception of content after the monitoring means determines that reception will not interfere with other receiver activity.

2 163. The receiver of claim 161, further comprising means for automatically enabling reception at a time of day when reception will most likely not interfere with other receiver activity.

2 164. The receiver of claim 161, wherein the monitoring means determines that reception will not interfere with other activity by monitoring user activity on an input device of the receiver.

2 165. The receiver of claim 164, wherein the receiver is a personal computer and the user activity comprises clicks on a mouse input device.

2 166. A receiver in a multicast system, comprising:  
2 a package receiver for receiving packets containing URL data items  
4 from a multicast network and assembling the received packets into a channel,  
4 wherein the channel comprises a set of URL data items;  
6 a memory for storing the channel; and  
6 a content viewer for allowing a user to request access to and access the  
URL data items in the stored channel.

2 167. The receiver of claim 166, further comprising a browser for  
2 searching the memory for URL data items requested by the user.

2 168. The receiver of claim 166, wherein the receiver comprises a  
2 personal computer. A

2 169. The receiver of claim 166, wherein the receiver comprises a set  
2 top box.

2 170. The receiver of claim 166, wherein the receiver is integrated  
2 with a digital television.

2 171. The receiver of claim 166, wherein the packets received from  
2 the multicast network are encrypted and the package receiver decrypts the  
packets.

172. A system for multicasting URL data items from web sites to a plurality of receivers, comprising:  
a web crawler for retrieving URL data items from the web sites and formatting the retrieved URL data items into packages;  
a package delivery subsystem for receiving the packages from the web crawler, fragmenting the packages into packets and transmitting the packets to a multicast network; and  
a conditional access system for determining which receivers are authorized to receive the packets, wherein the multicast network multicasts the packets only to authorized receivers.

173. The system of claim 172, wherein the web crawler retrieves URL data items from the web sites according to a predetermined channel definition.

174. The system of claim 172, wherein the multicast network multicasts an electronic program guide to each receiver, and wherein the electronic program guide contains descriptions of the web sites from which URL data items were retrieved.

175. The system of claim 174, wherein a receiver uses the electronic program guide to subscribe to selected web sites and the system further comprises a registration server for tracking subscription information.

176. The system of claim 175, wherein the registration server provides the subscription information to the package delivery subsystem.

2 177. The system of claim 172, further comprising a cache hit tracker  
4 which receives usage reports from the receivers, wherein the usage reports  
contain information identifying which URL data items, from the set of URL  
data items received by the receiver, were accessed by a user.

2 178. The system of claim 177, wherein the cache hit tracker stores  
the usage reports in hit log files.

2 179. The system of claim 178, wherein the cache hit tracker provides  
the hit log files to the web sites from which the URL data items were retrieved.

2 180. The system of claim 172, wherein the multicast network  
multicasts the packets to the receiver over a one-way high speed link.

2 181. The system of claim 180, wherein the high speed link comprises  
a satellite link.

182. A system for multicasting content organized into channels to a plurality of receivers, wherein a channel's content includes a plurality of URL data items from at least one web site, comprising:

- a web crawler for retrieving the URL data items from the web site via a TCP/IP network and formatting the retrieved URL data items into packages;
- a package delivery subsystem for receiving the packages from the web crawler and fragmenting the packages into packets;
- a conditional access system for determining which receivers are authorized to receive the packets; and
- a multicast network for receiving the packets from the package delivery subsystem, wherein the conditional access system encrypts the packets and the multicast network multicasts the encrypted packets to the authorized receivers, and wherein the authorized receivers store the packets in a memory and decrypt the packets.

183. The system of claim 182, wherein the web crawler compresses a subset of the retrieved URL data items, and wherein each URL data item is compressed individually independent of other URL content such that the receiver can decompress each URL data item without decompressing other URL data items.

184. The system of claim 182, wherein the web crawler assembles a base package containing each URL data item in the channel and subsequently assembles a delta package containing URL data items which have changed or are new since the previous assembling of the base package.

185. The system of claim 184, wherein the web crawler assembles the base packages and delta packages according to a schedule.

2 186. The system of claim 184, wherein the multicast network multicasts the base packages and the delta packages according to a schedule.

2 187. The system of claim 186, wherein the base packages are scheduled for multicasting at a time when the receiver is not likely to be in use for other applications.

2 188. The system of claim 184, wherein the web crawler compresses a subset of the retrieved URL data items, and wherein each URL data item is compressed individually independent of other URL content such that the receiver can decompress each URL data item without decompressing other URL data items.

2 189. The system of claim 188, wherein the web crawler difference compresses a subset of the URL data items that are present in both the delta package and the previous base package.

2 190. The system of claim 189, wherein the web crawler performs difference compression by:  
4 dividing a URL data item in the delta package into sections; and  
4 for each section, places into a compressed version of the URL data item, one of a reference to where that section can be found in the base package,  
6 or the section of the URL data item from the delta package.

2 191. The system of claim 184, wherein the web crawler assembles a second delta package which contains URL data items which have changed since the assembling of the previous delta package.

2 192. The system of claim 182, wherein each receiver comprises a content viewer for allowing a user to access the stored URL data items.

2 193. The system of claim 192, further comprising a cache hit tracker  
4 which receives usage reports from the receivers, wherein the usage reports  
contain information identifying which URL data items, from the set of stored  
URL data items, was accessed by a user.

2 194. The system of claim 193, wherein the cache hit tracker provides  
the usage reports to the web sites from which the accessed URL data items  
were retrieved. A

2 195. The system of claim 182, wherein the TCP/IP network  
comprises the Internet.

2 196. The system of claim 182, wherein the multicast network  
multicasts the packets to the receiver over a one-way high speed link.